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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,851	03/07/2001	John F. Hutton	10006513-1	5597

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EXAMINER

WANG, ALBERT C

ART UNIT	PAPER NUMBER
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2115

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/800,851

Applicant(s)

HUTTON ET AL.

Examiner

Albert Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Original claims 1-20 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7, 16 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the clock" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the count" in line 2. It is not whether "the count" refers to the "at least one clock count" in claim 10 or the "count of the toggle" in claim 14.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the element that "communicates with a JTAG interface".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 7 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by

Samaan, U.S. Patent No. 6,355,013.

As per claim 1, Samaan discloses method for detecting process variations, the method comprising the steps of:

controlling count gate control by a first circuit (Fig. 1, control of ring oscillators 116, 126, 136, and 146);

generating at least one clock count by a second circuit (Fig. 2, by ripple counter); and

outputting results of the clock count by a third circuit (Fig. 2, scan out chain comprising flip-flops 341-345).

As per claim 2, Samaan discloses the step of controlling comprises the steps of:

activating a scan signal (Fig. 1, TDI);

toggling a clock signal (TCLK); and

setting a reset signal on (RESET).

As per claim 3, Samaan discloses the step of controlling further comprises the steps of:

selecting an oscillator by activating and toggling the signals (Col. 3, lines 21-37);

enabling the oscillator (Col. 3, lines 21-37); and

setting the reset signal off (Col. 3, lines 21-37).

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As per claim 4, Samaan discloses the step of controlling further comprises the step of toggling the clock signal for a period of time (Col. 5, lines 21-23).

As per claim 5, Samaan discloses the step of generating further comprises the steps of:

outputting the count into a counter (Fig. 3, into ripple counter); and
reading the count into a scan chain (scan out chain comprising flip-flops 341-345).

As per claim 7, Samaan discloses the step of toggling the clock *signal* for reading out the clock count (Fig. 3, TCLK).

As per claim 10, Samaan discloses an apparatus to detect process variations comprising:
a first circuit to select a clock (Fig. 1, select ring oscillators 116, 126, 136, and 146);
a second circuit connected to the first circuit to generate at least one clock count (Fig. 2, ripple counter); and

a third circuit connected to the first circuit to output a result of the clock count (Fig. 2, scan out chain comprising flip-flops 341-345).

As per claim 11, Samaan discloses the first circuit comprises:

a scan signal (Fig. 1, TDI); and

a clock signal (TCLK), wherein the scan signal and the clock signal turn on at least one clock.

As per claim 12, Samaan discloses the first circuit further comprises:
a reset signal (Fig. 1, RESET); and
an enable signal, wherein the enable signal enables the at least one clock (Col. 3, lines 21-37).

As per claim 13, Samaan discloses the clock signal is toggled for a period of time (Col. 5, lines 21-23).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8, 9, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samaan as applied to claims 1, 4 and 10 above, and further in view of DeHaven et al., U.S. Patent No. 6,577,148 ("DeHaven").

As per claims 8, 9, and 20, while Samaan teaches communicating with an interface (Fig. 2, TAP output pads), Samaan does not expressly teach the interface to be a JTAG interface. DeHaven teaches using the IEEE 1149.1 standard, commonly known as JTAG, for testing a wafer (Col. 9, lines 34-55). At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply DeHaven's use of the JTAG standard to Samaan's test access

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port. A motivation for applying an existing interface standard is to save time developing a new one.

5. Claims 6 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samaan as applied to claims 4 and 13 above, and further in view of Stinson et al., U.S. Patent No. 6,553,545 ("Stinson").

As per claim 6 and 14, Samaan does not expressly teach implementation details for determining the "period of time". Stinson teaches storing the output of a toggle into a counter (Fig. 1, counter 14; Col. 3, lines 5-14, decisional logic 22 determines if time interval has elapsed). At the time of the invention, it would have been obvious to one skilled in the art to apply Stinson's outputting the toggle into a counter to Samaan's method and apparatus. A motivation would have been to ensure the integrity of the invention.

As per claim 15, Samaan teaches the third circuit comprises:

a counter (Fig. 3, ripple counter); and

a scan chain (comprising flip-flops 341-345), wherein the scan chain is connected to the counter.

As per claim 16, Samaan teaches the count is input to the counter (Fig. 3).

As per claim 17, Samaan teaches the reset signal is input to the counter (Fig. 3, RESET).

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As per claim 18, Samaan teaches the scan chain further comprises a read signal, wherein the read signal reads the count into the scan chain (Fig. 3, LOAD/SHIFT).

As per claim 19, Samaan teaches the clock signal is toggled to read out the count from the scan chain (Fig. 3, TCLK).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Wang whose telephone number is 703-305-5385. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 703-305-9717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 10, 2004


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